UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,483	04/20/2001	Leon Edward Gregg	ROC920000334US1	2588

7590 04/21/2004	EXAMINER
Gero G. McClellan	NGUYEN, VAN H
Thomason, Moser & Patterson, L.L.P.	

	ART UNIT	PAPER NUMBER
3040 Post Oak Boulevard, Suite 1500	2126	
Houston, TX 77056-6582	DATE MAILED: 04/21/2004	2

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/839,483	GREGG ET AL.
	Examiner	Art Unit
	VAN H NGUYEN	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action is in response to the application filed April 20, 2001. Claims 1-49 are

presented for examination.

Specification

2.   The disclosure is objected to because of the following informalities:

- the phases "neither *the guest operating system* nor the guest operating system has the

key" (page 3, lines 22-23 and page 4, lines 20-21) should read "neither *the host operating system*

nor the guest operating system has the key"

Applicant is required to review the entire specification and make appropriate corrections.

Claim Objections

3.   Claims 21 is objected to because of the following informalities:

The phrase "the host operating system *ahs* the key" (line 7) should read "the host

operating system *has* the key"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 2-3, 21-23, and 34-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A.   As to claims 2, 21, and 35, the following claim languages are indefinite:

(i) in claims 2 and 35, it is unclear what is meant by "accepting the request from one of the host operating system and the guest operating system having the key."

(ii) in claim 21, it is unclear what is meant by "accepting the request from the guest operating system, if the request is an altering request from the guest operating system and neither the host operating system nor the guest operating system has the key; and rejecting the request from the guest operating system, if the request is an altering request from the guest operating system and neither the host operating system nor the guest operating system has the key."

B.   As to claim 34, the following terms lack antecedent basis:

(i) "the access device" (line 3)

(ii) "the host operating system" (lines 3-4)

(iii) "the guest operating system" (lines 5-6)

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made

This application currently names joint inventors. In considering patentability of the
claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the
various claims was commonly owned at the time any inventions covered therein were
made absent any evidence to the contrary. Applicant is advised of the obligation under
37 CFR 1.56 to point out the inventor and invention dates of each claim that was not
commonly owned at the time a later invention was made in order for the examiner to
consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)
prior art under 35 U.S.C. 103(a).

7.   Claims 1-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ofer et al.**

(U.S. 6,353,869).

8.   As to claim 17, Ofer teaches the invention substantially as claimed including a method

for allocating use of an access device between a host operating system and a guest operating

system *(col.3, lines 20-27; col.5, line 53-col.6, line 20; and col.6, line 59 - col.7, line 9)*, the

method comprising:

- receiving a request from the host operating system to use the access device *(col.3, lines
20-27; col.6, lines 62-63; and col.9, lines 24-59)*; and

- determining whether the guest operating system has a key for the access device, where

the key enables one of the host operating system and the guest operating system to use the access

device *(col.3, lines 20-33; col.4, line 38-54; and col.6, lines 21-58)*.

While teaching that the processors must request and obtain the lock in order to access the

shared resource, Ofer is silent on "accepting the request from the host operating system, if no key

is found with the guest operating system."

Ofer, however, discloses *"a successful requestor from among the controllers obtains the*

lock and is identified as the current holder of the lock in the lock request queue" (col.4, lines 1-

4) and *"only after a successful requestor from among the processors obtains the lock will that*

processor perform its transaction on shared resource" (col.4, lines 21-37).

It would have been obvious to one of ordinary skill in the art to have applied the teaching

of Ofer for "accepting the request from the host operating system, if no key is found with the

guest operating system" in order to provide means for controlling and distributing the shared

resource among the processors.

9.   As to claim 18, Ofer teaches determining whether the host operating system has the key

(col.3, lines 20-33; col.4, line 38-54; and col.6, lines 21-58). Note the discussion of claim 17

above for rejection of "accepting the request from the host operating system, if the key is found

with the host operating system."

10.   As to claim 19, Ofer teaches determining, if no key is found with one of the host

operating system and the guest operating system *(col.3, lines 20-33; col.4, line 38-54; and col.6,*

lines 21-58), whether the request is an altering request to change a state of the access device; and

granting the key to the host operating system, if the request is an altering request *(col.9, lines 24-46)*.

11.   As to claim 20, Ofer teaches rejecting, if the key is found with the guest operating system, the request from the host operating system *(col.9, line 60-col.10, line 45)*.

12.   As to claim 1, the rejection of claim 17 above is incorporated herein in full. In addition, Ofer further teaches:

- determining whether a received request to use the access device is from the host operating system *(col.4, lines 38-54 and col.6, lines 21-58)*;

- determining the request as one of an altering request to change a state of the access device and a passive request to read the access device, accepting the request from the host operating system, if the request is an altering request from the host operating system *(col.9, lines 24-46)*; and

- rejecting the request from the guest operating system, if the request is an altering request from the guest operating system and neither the host operating system nor the guest operating system has the key *(col.6, lines 21-58 and col.9, line 24-col.10, line 45)*.

While teaching "accepting the request from the host operating system, if the request is an altering request from the host operating system," Ofer is silent on "accepting the request from the host operating system, if the request is an altering request from the host operating system and neither the host operating system nor the guest operating system has the key."

Ofer, however, discloses *"at the start, several of processors 1a-1n are running processes which need to perform atomic operations such as read-modify-writes, on shared resource 4. In order to service its transaction request, the processor 1c, in this case a host controller or device controller, must obtain a lock on at least the data structure which is the target of the request."* (col.9, lines 24-46).

It would have been obvious to one of ordinary skill in the art to have applied the teaching of Ofer for the step of accepting the request as mentioned above in order to provide means for controlling and distributing the shared resource among the processors.

13.   As to claim 2, note the rejection of claim 17 above for rejection of "accepting the request from one of the host operating system and the guest operating system having the key."

14.   As to claim 3, Ofer teaches the guest operating system releases the key after use of the access device to enable a transient use of the access device *(col.4, lines 38-54; col.6, lines 21-58; and col.10, lines 1-45).*

15.   As to claim 4, Ofer teaches rejecting, if one of the host operating system and the guest operating system has the key, the request from the other operating system *(col.6, lines 21-58 and col.9, line 24-col.10, line 45).*

16.   As to claim 5, Ofer teaches accepting the request from one of the host operating system and the guest operating system, if the request is a passive request and neither the host operating system nor the guest operating system has the key *(col.11, lines 5-16).*

17.   As to claim 6, Ofer teaches the request is passed to an access interface coupled to the access device *(col.6, lines 21-58).*

18.   As to claim 7, Ofer teaches the access interface converts the passed request into a format

suitable for the access interface *(col.6, lines 21-65)*.

19.   As to claim 8, Ofer teaches the access interface comprises an input/output (I/O) adapter

and the access device comprises a writable disk drive *(col.6, lines 59-col.7, line 9)*.

20.   As to claim 9, Ofer teaches the passed request comprises a SCSI command *(col.6, lines

1-20)*.

21.   As to claim 10, "the SCSI commands" is inherent to the system of Ofer.

22.   As to claim 11, Ofer teaches the host operating system and the guest operating system are

of different types *(col.5, line 54-col.6, line 20)*.

23.   As to claim 12, Ofer teaches at least one of the host operating system and the guest

operating system is, among other things, UNIX, *(col.6, lines 7-10)*.

24.   As to claim 13, Ofer teaches the access device is considered locked to a particular

operating system if the particular operating system has the key *(col.6, lines 21-58 and col.10,

lines 1-55)*, where the particular operating system is one of the host operating system and the

guest operating system *(col.5, line 54-col.6, line 20)*.

25.   As to claim 14, Ofer teaches determining whether a received request to release the key is

from one of the host operating system and the guest operating system having the key; releasing

the key from the one of the host operating system and the guest operating system having the key

(col.6, lines 21-58 and col.10, lines 1-55); sending a reset signal to the host operating system and

the guest operating system, where the reset signal causes the host operating system and the guest

operating system to reset a state of an associated cache memory *(figs. 2-3 and col.13, lines 8-33)*.

26. As to claim 15, Ofer teaches the reset signal simulates a change of the access device

(col.13, lines 8-61).

27. As to claim 16, Ofer teaches the request from the guest operating system is for a

capability of the access device that is supported by the guest operating system and unsupported

by the host operating system *(col.9, lines 24-59)*.

28. As to claims 34-49, they are directed to a computer readable medium for implementing

the method of claims 1-16, and are similarly rejected under the same rationale.

29. As to claim 21, the rejection of claim 1 above is incorporated herein in full. However,

claim 21 recites receiving a request from the guest operating system.

Ofer teaches receiving a request from the guest operating system *(col.4, lines 38-54;*

col.6, lines 21-58; and col.9, lines 24-59).

30. As to claim 22, Ofer teaches accepting the request from the guest operating system, if the

key is found with the guest operating system; and rejecting the request from the guest operating

system, if key is found with another operating system *(col.11, lines 23-65)*.

31. As to claim 23, Ofer teaches the another operating system comprises one of a host

operating system and another guest operating system *(col.5, line 54-col.6, line 20)*.

32.   As to claim 24, it is directed to an apparatus for performing the method of claim 1, and is

similarly rejected under the same rationale. Claim 1, however, further recites "a memory for

storing a sharing management program."

Ofer teaches a memory for storing a sharing management program *(col.6, line 59-col.10,*

line 9 and col.10, lines 7-45).

33.   As to claims 25-30 and 33, they are directed to an apparatus for performing the method of

claims 7-12 and 16, and are similarly rejected under the same rationale.

34.   As to claim 31, Ofer teaches the host operating system and the guest operating system are

part of a logically partitioned system *(col.5, lines 54-63)*.

35.   As to claim 32, Ofer teaches the host operating system and the guest operating system are

contained in separate computer systems *(fig.1)*.

Conclusion

37.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

- Sekiguchi et al. (U.S. 6711605) teaches "Multi OS configuration method and computer

system"

- Flynn Jr. et al. (U.S. 6453392) teaches "Method of and apparatus for sharing dedicated

devices between virtual machine guests"

- Freitas et al. (U.S. 6401110) teaches "Method for managing concurrent processes using dual locking"

- Nakahara et al. (U.S. 6253225) teaches "Process executing method and resource accessing method in computer system"

- Ellsworth et al. (U.S. 6131113) teaches "Managing a shared resource in a multi-processor system"

- Yudenfriend et al. (U.S. 5471609) teaches "Method for identifying a system holding a `Reserve`"

- Loten (U.S. 5138713) teaches "Multiprocessing computer system with exit logic and method for maintaining resource integrity"

- Hays Jr. et al.(U.S. 4354227) teaches "Fixed resource allocation method and apparatus for multiprocessor systems having complementarily phased cycles"
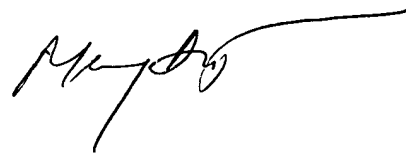
38.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H NGUYEN whose telephone number is (703) 306-5971. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VHN

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100